Ch. 9 Classification

9.1 Sorting it all out

I. Why classify?

A. Scientists classify organisms to make sense of living things

1. Scientists classify to establish characteristics and relationships between species

B. **Classification** - putting things into orderly groups based on similar characteristics

II How do Scientists classify organisms?

A. **Taxonomy** - the science of classifying, naming, and describing organisms

1. Science of taxonomy founded Carlos Linnaeus

B. Today, taxonomical classification scheme uses an eight-level system

C. **Branching Diagrams** - several characteristics are listed on a line that points to the right; each animal to the right shares characteristics

→ see Figure 2, p. 223

III Levels of Classification (8 levels)

→ Domain – Kingdom – Phylum – Class – Order → Family – Genus – Species

IV Scientific Names

A. Two parts: Genus and the species, Genus is capitalized and species is lowercase

B. Dichotomous key

1. Dichotomous key – is an identification aid that uses sequential pairs of descriptive statements

a. Asks a series of questions in which the answers direct you towards a certain species to I.D.

9.2 Domains and Kingdoms

I. The Domain Archaea - made up of Archaea

A. Archaea - one of two kind of prokaryotes, but are different from prokaryotes due to different genetics and a unique cell wall

1. can live in extreme environments, originally found in YNP

B. Domain Bacteria- made up of only Bacteria

1. Bacteria- prokaryotes that usually have a cell wall and reproduces by cell division (binary fission)

II. The Domain Eukarya- the eukaryotes

A. Four kingdoms: Protista, Fungi, Plantae, Animalia

1. Kingdom Protista - made up of protists, single or simple multicellular organisms

a. Examples: Protozoa and Algae

2. Kingdom Fungi - molds and mushrooms (fungi) that are multicellular and do not perform photosynthesis

3. Kingdom Plantae- the plants, including trees

a. multicellular organisms that have cell walls made of cellulose, lack mobility and use photosynthesis for energy

4. Kingdom Animalia- the animals

a. complex, multicellular organisms that don't have cell walls, usually capable of movement, and have specialized organs

B. Strange organisms- there are certain organisms that are difficult to classify

1. Ex: red cup sponge = animal; see Figure 9 p. 233